2021 NOMINATION FOR SECRETARY OF THE NAVY
AFLOAT ENVIRONMENTAL AWARD - MILITARY SEALIFT COMMAND

1. Introduction. Commissioned in 1979, USS FRANK CABLE (AS 40) (FCB) is a forward deployed submarine tender homeported in Guam. Our primary mission is to provide critical warfighting repairs, rearmament, and reprovisioning to U.S. and Allied submarines and surface ships within U.S. FIFTH and SEVENTH Fleet Areas of Responsibility. The unique capabilities that FCB brings, with her hybrid crew of over 1,000 U. S. Navy sailors and Military Sealift Command (MSC) civilian mariners (CIVMARS), provide vital flexibility to the Fleet Commander and extend the range and impact of U. S. Naval Forces. For majority of 2019 and the entirety of 2020, FCB fulfilled her role as the Lead Maintenance Activity (LMA). We provided intermediate-level maintenance, repair, ship services, supply replenishment, weapons, ammunition, industrial skills training, and personnel qualification to nuclear and conventionally powered Naval Forces in the Western Pacific region.

2. Background.

2.1 Environmental Challenges. As the designated LMA, FCB flawlessly executed eight Continuous Maintenance Availabilities (CMAVS), 43 Voyage Repair Periods (VRP), and 14 Fly-Away Team (FAT) Missions for more than 477,680 man-days of submarine maintenance and over 9,000 man-days of surface ship maintenance while managing concurrent Ship Voyage Repair Availabilities (VRA) and the unique challenges of operating in a COVID environment. Significant challenges faced by the command in the last two fiscal years include:

a. Careful coordination and interagency efforts with Commander, Submarine Force Pacific (COMSUBPAC), MSC, Cabras Marine, Guam Shipyard, tended units, and other repair entities to ensure full program compliance with applicable USN and MSC environmental regulations.

b. Actively manage and accurately prioritize the dynamic worklist of equipment repair and maintenance while balancing tighter budgets and increasing fleet demands. As a 41-year old warship, FCB meticulously manages the potential risks of having outdated or obsolete systems, and the presence of lead-based paint and presumed asbestos containing materials which prompts more frequent preventive maintenance schedules and aggressive assessment of material condition.

c. Ensure an effective environmental awareness training program for FCB crew and embarked personnel on proper solid waste management, oil and hazardous substance (OHS) spill prevention, incident response, reporting, and hazardous waste procedures to minimize risk of program degradation as a result of high crew turnover rates.

d. Ensure efficient hazardous waste management and disposal, including radioactive material and ordnance handling operations onboard FCB, tended units, and Emergent Repair Facilities ashore during highly industrial LMA and VRA periods.

While these challenges are unlikely to be different from our contemporaries, the great lengths we go to ensure compliance with all applicable regional, local, Navy, and MSC regulations is what

sets us apart. Through the conscious effort of all hands, FCB had zero environmental violations, zero environmentally significant incidents, and an outstanding record of program audits for Hazardous Material (HAZMAT) Control and Environmental Protection (EP) programs regardless of command schedule, from operations in an unfamiliar shipyard environment during the 2019 Mid-Term Availability (MTA), industrial operations as LMA, and the unique COVID environment.

2.2 Environmental Management, Organization, and Staffing. At sea, the Commanding Officer is the environmental on-scene commander. In port, the Navy Command Duty Officer (CDO) and the MSC Mate on Watch (MOW) ensure compliance with environmental standards, procedures, and policies in concert with local port authorities. The Safety Officer is the Navy Afloat Environmental Protection Coordinator (AEPC), while the MSC Navigator is the designated Command AEPC. Together, they serve as principal advisors to the Commanding Officer and Ship's Master on environmental policies. The Chief Mate manages the solid waste program and ensures the crew is trained on over-the-side spill prevention, response, and recovery. The Chief Engineer is responsible for oil pollution abatement and marine sanitation systems. The MSC Supply Officer, as the HAZMAT Coordinator, is responsible for proper HAZMAT stowage, disposal, and spill cleanup. All watchstanders are properly trained on immediate OHS spill response to mitigate the environmental impact of accidental discharge.

To ensure all EP program requirements are met, the Safety Department utilizes the Board of Inspection and Survey (INSURV) and OPNAVINST M-5090.1, Appendix D checklists to identify and track correction of discrepancies. Significant findings are briefed during quarterly Environmental Compliance Board (ECB) meetings held in conjunction with Safety Council meetings. The ECB evaluates program compliance and assesses need for additional resources. .

2.3 Environmental Guidance, Directives, and Plans. The COMSUBPAC and COMSC "Operating Manual for Joint Operation of AS-39 Class Submarine Tenders" provide the implementing guidance for safety and EP programs in addition to Navy and MSC Safety Management System (SMS) instructions. Table 1 lists EP instructions utilized onboard FCB.

Table 1 - Instructions and Procedures Utilized

Document	Title	Date
OPNAVINST M-5090.1	Environmental Readiness Program Manual	3 Sep 2019
COMSCINST 5090.1D	Environmental Protection Program	4 Mar 2017
OPNAVINST 5100.19F	Navy SOH Manual for Forces Afloat	5 May 2019
JRM NBG PEM	Joint Region Marianas, Naval Base Guam Environmental Manual	April 2018
2.2-001-ALL	Air Emissions	January 2020
2.2-002-ALL	Marine Life Protection	January 2020
2.2-003-ALL	Ballast Water Management	January 2020
2.2-005-ALL	Sewage and Gray Water Management	January 2020
2.2-008-ALL	Hazardous Material Handling	January 2020
2.2-016-ALL	Shipboard Garbage Management	January 2020
2.2-017-ALL	Ship Energy Efficiency Management Plan	January 2020
2.4-002-ALL	Potable Water	January 2020

2.4-005-ALL	Handling/Disposal of Medical Waste	January 2020
7.4-002-ALL	Used Oil and Oily Waste	January 2020
7.4-009-ALL	Shipboard Oil Pollution Prevention	January 2020
8.18-001-SQ	OHS Spill Response	January 2020
FCBINST 5090.1A	Oil and Hazardous Substance Spill Contingency Plan (reviewed annually; FY-21 review in progress)	25 Nov 2018
FCBINST 5100.21B	Hazardous Material Control (reviewed annually; FY-21 review in progress)	9 Nov 2018

3. Program Summary.

3.1 Environmental Program and Degree of Compliance with Chapter 35 and Appendix D of OPNAV M-5090.1. FCB's strong safety culture and environmental readiness are demonstrated by our full compliance with SMS and EP programs as evidenced by zero discrepancies identified during 2019 COMSUBPAC Safety and Occupational Health Management Evaluation (SOHME) and the 2019 and 2020 MSC SMS audits. During the 2019 MSC Internal SMS audit, the auditor noted that "officers and crew of the ship were the most "SMS-engaged" this auditor has seen in MSC. MSC inspectors during the Afloat Training Team inspection also noted the exceptional integration of U.S. Navy and MSC crew members during damage control response, including their ability to effectively respond to OHS spills and radiological casualties to tended units. All hands receive initial environmental training during Fleet Indoctrination Training Class and annual training during operational pauses and safety stand downs.

3.2 Most Outstanding Program Features and Accomplishments. In FY 2019 and 2020, the FCB crew demonstrated outstanding mission readiness, while leading new initiatives to increase effectiveness and efficiency. Specific achievements include:

a. Pioneered a number of noteworthy Guam "firsts" for submarine tender evolutions without any safety or environmental incidents including: The first ever waterborne overhaul of Main Ballast Tank vent valve bearings – a job normally completed in dry dock; the first SEAL Delivery Vehicle and Dry Docking Shelter offload from a VIRGINIA Class submarine; the first ever onload of 12 CLS Tomahawk Land Attack Missiles (TLAM); and the first tender capability to support Harpoon Missile and Submarine Launched Mobile Mine (SLMM) operations.

b. As the designated LMA, FCB flawlessly executed the following with no environmental violations or OHS incidents:

(1) Eight Continuous Maintenance Availabilities (CMAVS), 43 Voyage Repair Periods (VRP), and 14 Fly-Away Team (FAT) Missions for more than 477,680 man-days of submarine maintenance and over 9,000 man-days of surface ship maintenance. FCB also established a forward positioned Dive Locker in the strategic location of Duqm, Oman, and executed 1,148 dives with 2,335 hours of bottom time in support of underwater submarine and surface ship repairs.

(2) Over 64 radioactive material transfers, the generation and delivery of over 428K gallons of pure water, and the management of radioactivity monitoring for over 4,000 personnel and homeported and visiting submarines.

(3) Over 1,150 ordnance/ammunition transfers totaling over 250K pounds of Net Explosive Weight, post-range flushing for 11 MK-48 ADCAP torpedoes, and offloads of 15 MK-48 torpedoes and over 400K rounds of ammunition. In addition, Supply Department accurately tracked, received, and transferred requisition requests valued at over $56M, while maintaining over 18K inventory line items across 19 storerooms.

c. Five submarine alongside moorings, over 400 Damage Control drills including OHS spill response, and numerous EP training sessions for over 2,000 military and civilian personnel from FRANK CABLE, EMORY S LAND, tended units, and visiting U.S. and Allied ships, enhancing OHS response and successfully cultivating a culture of environmental consciousness at all levels.

d. Coordinated efforts between USN and MSC to prioritize shipboard system repairs and upgrades through a successful $8.8M Mid-Term Availability, five VRAs totaling $10.83M, and multiple self-help projects with over 366 major repairs, 12,362 maintenance checks, and 48,000 production hours, greatly improving the ship material readiness condition and crew habitability.

e. Extensive repair and replacement of uncontaminated drains and fresh water drain systems in the Fire and Engine Rooms over the course of two years, resulting in significant reduction of bilge water accumulated through the wastewater system. These dedicated efforts decreased the oily waste offloads from once a week to once a month, saving hundreds of dollars in operating costs.

4. <u>Accomplishments</u>.

4.1 <u>Air Pollution Control Practices and Improvements</u>.

4.1.1 Engine Emissions. The Engine Department monitors engine emissions during Boiler light-offs and Emergency Diesel Generator testing. Engine Room watchstanders closely monitor fuel/air ratio and make necessary adjustments to minimize engine exhaust emissions. Our Boiler Control System received extensive repairs, as well as inspection and calibration from the NSWC Steam Plant Automation Group to ensure maximum energy conservation and minimal stack emissions.

4.1.2 Refrigerant Use. Preventive maintenance of air conditioning units is conducted to ensure any leaks are promptly corrected. FCB maintains a “Freon Usage and Inventory” log which tracks consumption of ozone depleting substances (ODS) to monitor loss of freon due to leaks. The log is audited during our annual SMS assessment. All licensed engineers and refrigeration engineers on the ship are Certified EPA licensed “Universal Technician” which requires knowledge of the various environmental rules, particularly with ODS.

4.1.3 Volatile Organic Compound (VOC). FCB relentlessly strives to reduce VOC emissions by implementing work practices to reduce vapor releases, providing crew training on

proper use and thinning restrictions of marine paints, using only low VOC paint onboard, and keeping containers of VOC-containing materials closed when not in use. All HAZMAT storerooms are inspected quarterly by Safety and MSC Supply Departments to ensure proper storage of VOCs are met or exceeded.

4.2 <u>Water Pollution Control</u>.

4.2.1 CHT System Management Practices. The Engine Department complies with the International Convention for the Prevention of Pollution from Ships (MARPOL) which requires ships to not discharge graywater or black water within 12 nautical miles of land. These efforts prevent unsightly discharges into sensitive waters, often near popular seaside attractions.

4.2.2 OHS Spill Prevention and Response. In the past two years, FCB had zero environmentally significant incidents. In addition to management practices, all oil spill kits inventories are properly maintained. FCB's Oil/Hazardous (OHS) Spill/Discharge response plan is outlined in MSC's Integrated Vessel Response Plan (VRP) for Tank Vessels, 8.18-001-SQ. FCB conducts quarterly OHS spill response drills, including training on notifications and reporting requirements, shore side response activities, and emergency response to ensure preparedness. FCB continuously strives to reduce oil spills through proper preparation, rigid adherence to published procedures, and operational risk management during OHS movement evolutions. During an oil sheen sighting occurrence while moored in Naval Base Guam, timely reporting of watchstanders per regulatory requirements ensured effective spill clean-up response.

4.2.3 Oily Waste Management and Oil Content Monitor (OCM) Capabilities. As a mobile shore repair facility for submarines alongside in port that lack capabilities to receive direct shore services, FCB safely handled and transferred Diesel Fuel Marine (DFM) to tended units without incident. In addition to their significant effort to decrease oily waste production as discussed in paragraph 3.2 (e), Engine Department further reduce oily waste generation by accurately documenting and reviewing all fuel transfers, amount of bilge water generated, and oily waste offloads in their Oil Record Book. Underway, the oily waste separator equipped with OCM ensures processed oil and oily effluents are discharged overboard only when oil content is below 15 ppm.

4.3 <u>Solid Waste Management and Resource Recovery</u>.

4.3.1 Solid Waste Management Practices. To maximize reuse and recycling, FCB segregates cardboard, bulk metals, and wood for shoreside processing, as well as reuses tri-walls, pallets, and material sub-containers. At-sea, solid waste is segregated at the lowest level and disposed of in accordance with SMS and OPNAVINST 5090.1 series requirements. In 2019, FCB adopted more stringent garbage discharge restrictions at sea by discharging pulverized food waste and paper trash overboard only when greater than 25 miles from land.

4.3.2 Source Reduction Techniques. Despite manning gaps, MSC Electricians worked throughout 2019 and 2020 to install energy efficient LED deck lights by replacing old incandescent, fluorescent, interior halogen lights and battle lanterns throughout the ship with LED lights, dramatically decreasing energy consumption and saving money in maintenance and

replacement costs due to the longer LED lifespan. In 2019, Weapons Department installed a new Fire Arms Training Simulator to conduct proficiency training for Small Arms and Crew Served Weapons. This system is utilized by FCB crew and supported submarines, reducing the amount of spent ammunition for waste processing and saving over $200K annually in live ammunition costs. MSC Food Service pre-calculates the amount of food crewmembers consume during each meal to eliminate waste, conserve man-hours, power, and minimize water consumption.

4.3.3 Recovery Recycling Techniques. All potentially recyclable materials, such as metal and plastics, are saved from the waste stream for recycling. One example of FCB's dedication to recycling efforts was in 2020 when FCB had to condemn over 40 carbon dioxide fire extinguisher bottles. Instead of simply sending them ashore as hazardous material, MSC Deck Department emptied the bottles, removed all plastic, and cut the bottles in half. By taking these measures, FCB was able to dispose of the portable extinguishers as metals for recycling and further reuse.

4.4 HAZMAT / Hazardous Waste Management. The hybrid Navy and MSC Supply Departments work together to minimize the volume of new HAZMAT brought onboard and the hazardous waste generated. The diligent efforts by Hazardous Material Inventory Control System (HICS) personnel to accurately maintain an inventory of over 500 items and effectively manage storerooms minimized potential spills, reduced excess HAZMAT handled, and decreased occupational exposures to toxic materials. Prior to requesting HAZMAT, personnel are required to verify material availability and validate the minimum amount required for the task. This practice not only improves our fiscal management and onboard quantity control, but also reduces costs and increases efficiency. The Safety Department and HICS personnel conduct monthly satellite locker inspections and quarterly storeroom inspections both onboard and at ashore LMA facilities to ensure proper stowage and mitigate potential for spills and fires.

4.5 Protective Measures Assessment Protocol (PMAP). FCB watchstanders exercise caution when operating in areas likely to contain marine mammals and utilize PMAP prior to conducting all at-sea training and testing events. Lookouts are posted prior to at-sea training to spot marine wildlife. They are trained quarterly to maintain proficiency. Prior to underway, FCB AEPCs monitor the "U.S. Navy Marine Species Monitoring" Pacific Projects and technical reports sections to ensure the most current data and techniques are utilized for detection of marine animals.

4.6 Sonar Positional Report System. Not Applicable.

4.7 Environmental Awareness. FCB's exemplary environmental stewardship initiatives demonstrated commitment to protecting the environment by adhering to all environmental standards, while achieving her mission and supporting warfighter readiness. In 2019, FCB personnel devoted over 1,500 volunteer hours to numerous environmental stewardship projects within the communities we serve. FCB contributed to positive and lasting improvements in environmental health that strengthened ties with community leaders and the citizens in Guam. Despite COVID restrictions in 2020, FCB managed to continue with team clean-up efforts, including a Polaris Point Beach Clean-up in observance of Earth Day.